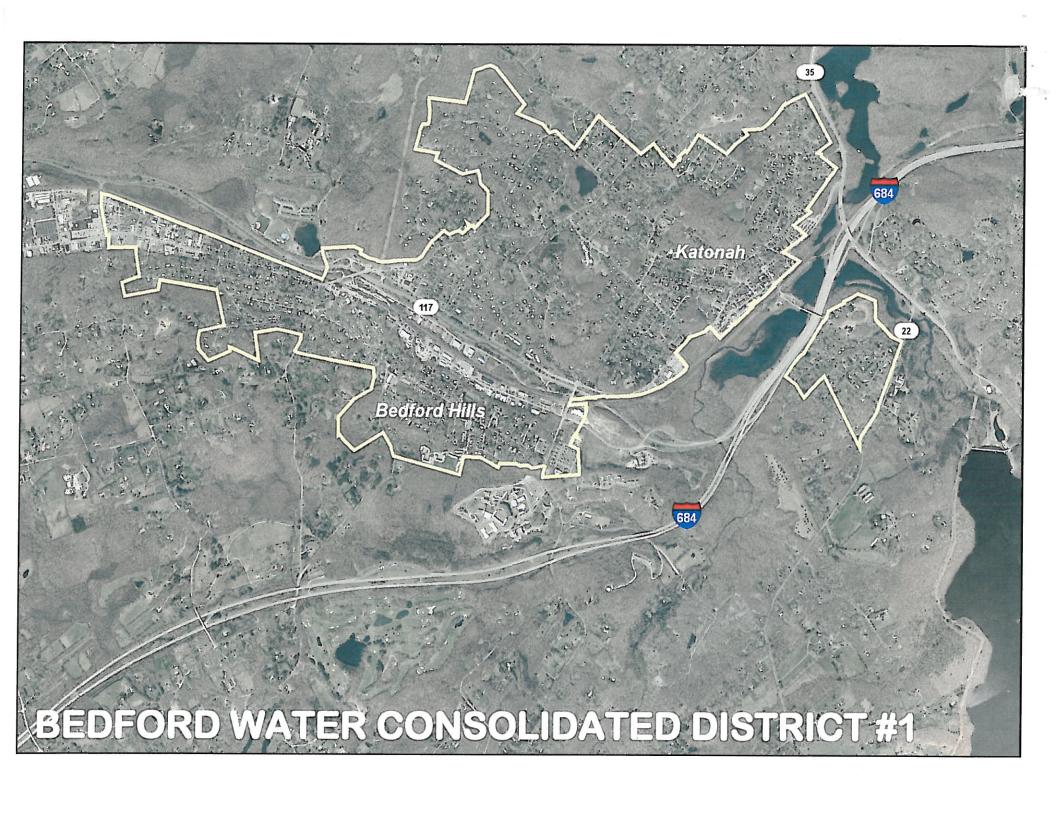
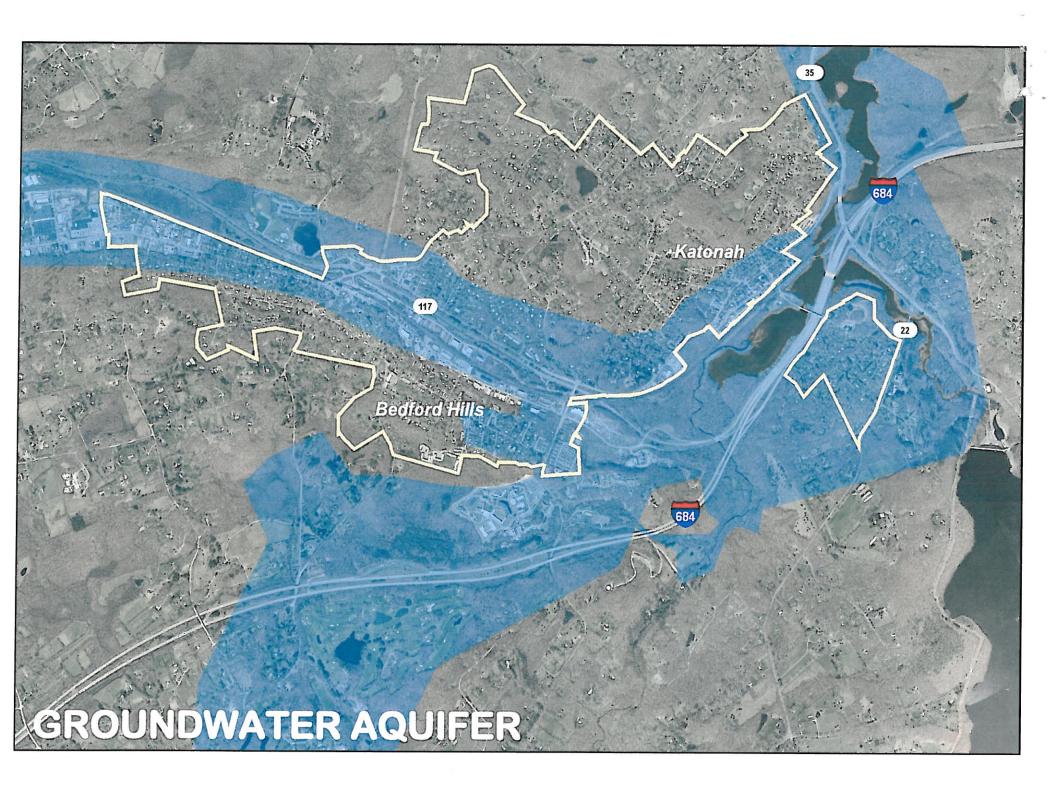
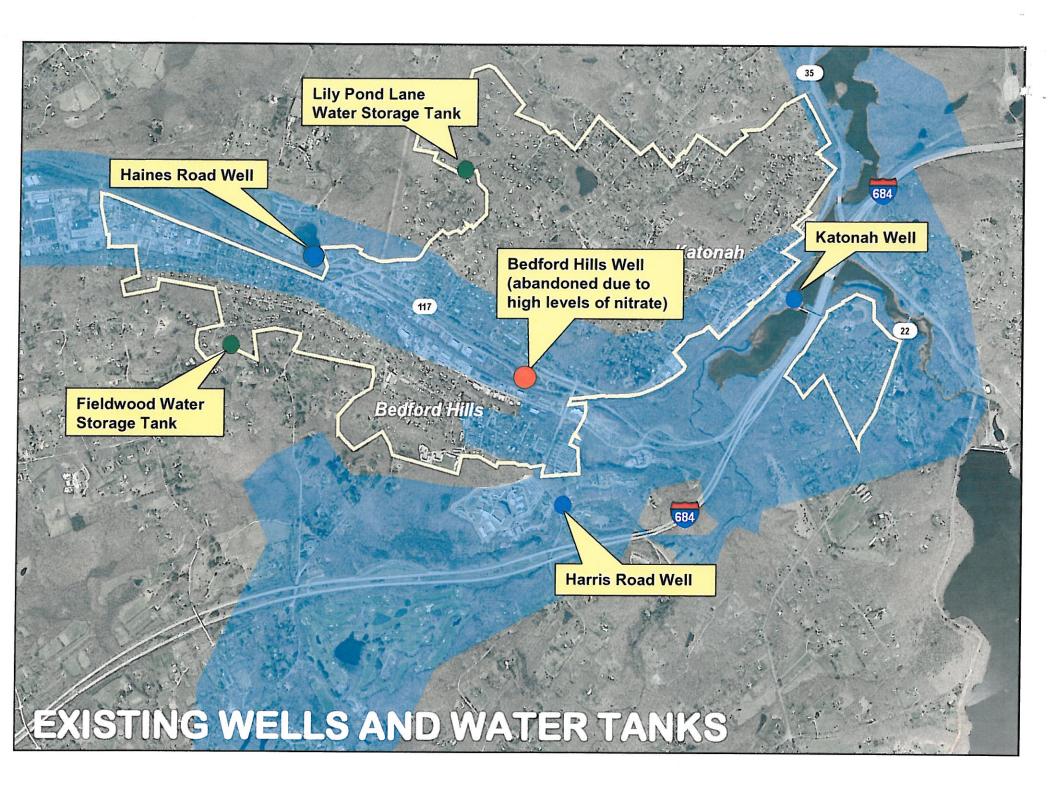
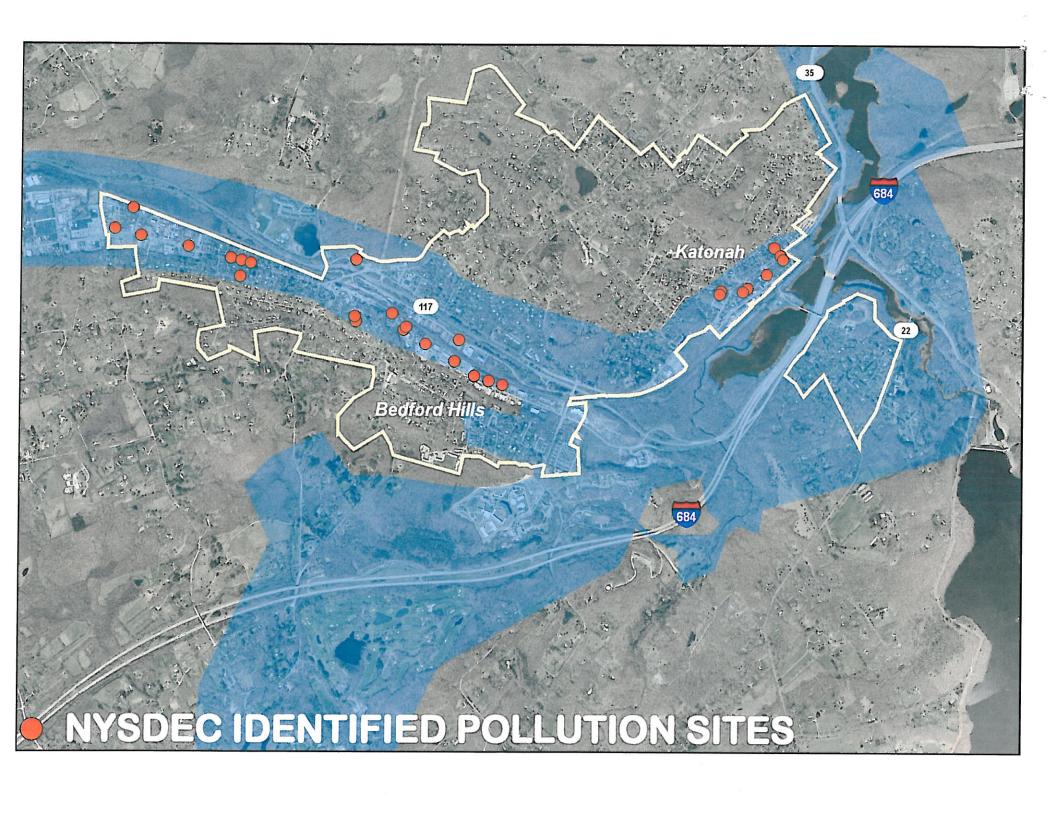
## Town of Bedford Consolidated Water District # 1 Proposed Water Filtration Plant & Connection to the Delaware Aqueduct

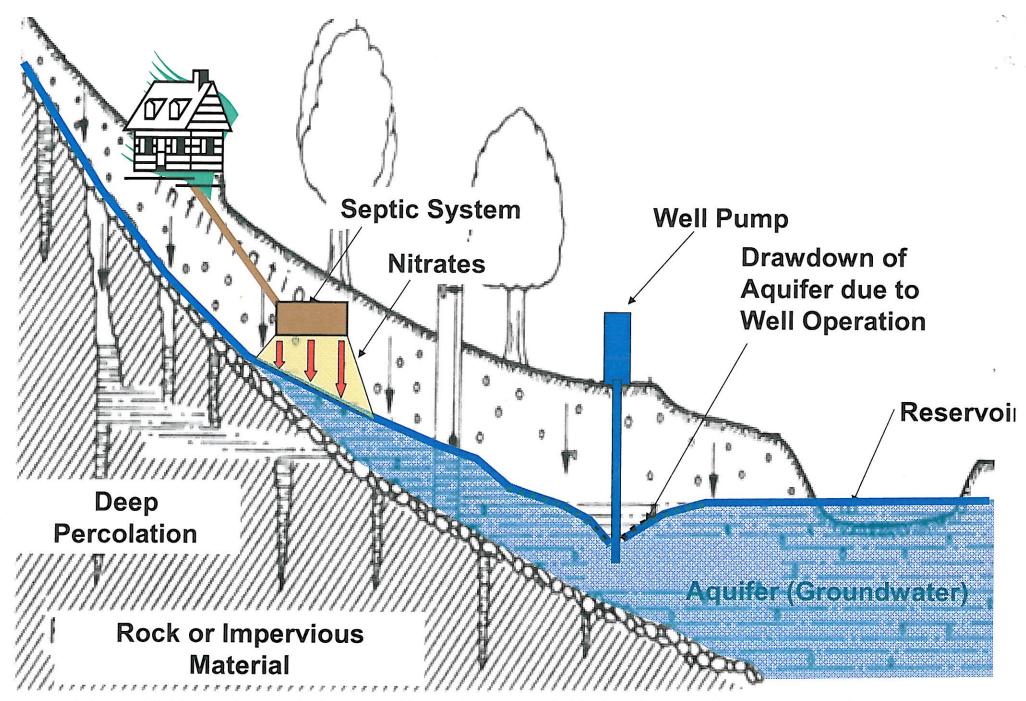
Shaft #13 April 22, 2009











HYDRAULIC PROFILE FOR HYDROLOGIC CYCLE

## Existing Water Supply Problems

- Your water is safe to drink it meets health standards. Water is tested by certified operators and WCDOH.
- Loss of wells due to contaminant levels
- Levels of contaminants such as nitrates, chlorides, and manganese have increased in recent years in the remaining wells
- Risk of loss of other wells if contaminant levels increase further
- Each contaminant requires a different treatment technology

### Contaminants Detected in Test Wells

Parameters	UNITS	TW- 3	TW-7	Standard
1,2,4-Trimethylbenzene	ug/l	1	ND	5 .
p & m Xylenes	ug/l	2	ND	5
Tetrachloroethylene	ug/l	1	ND	5
Trichloroethylene	ug/l	ND	2	5
Chromium	mg/l	0.005	ND	0.05
Iron	mg/l	16.0	14.9	0.3
Manganese	mg/l	0.141	0.299	0.3
Ammonia	mg/l	1.91	0.60	2.0
Nitrite	mg/l	ND	ND	1.0
Nitrate	mg/l	5.56	2.93	10
Sulfate	mg/l	39.2	29.4	250
pH		6.25	6.24	>6.5 < 8.5
Temperature	F	59.5	55.4	None

## Water Supply Alternatives 2005

Short Term - 5 years

1- Nitrate Removal at Katonal

2 - Mt Kisco water supply

3 - New Casile water supply

4 - Find additional wells to

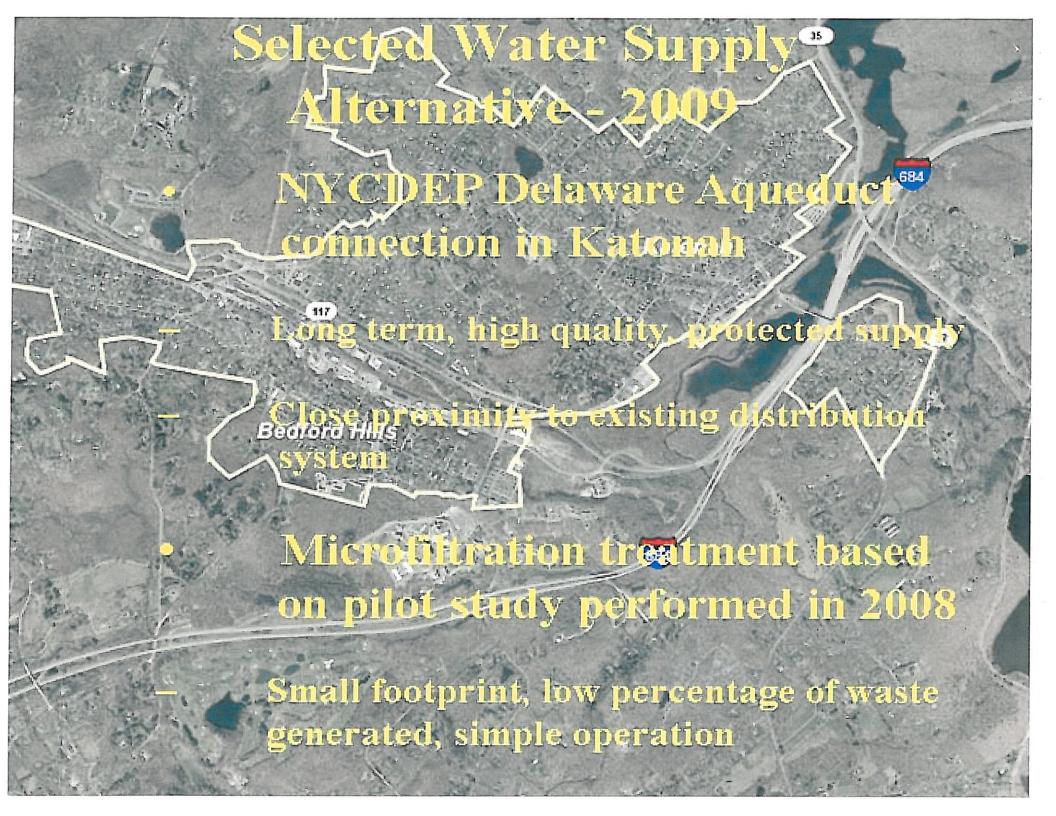
supplement existing supplies

Bedford Hills

Long Term - 30 years

1 Tap shaft # 13 and build Town filter plant

2 Tap shaft # 13 and supply Mt Kisco Filter Plant

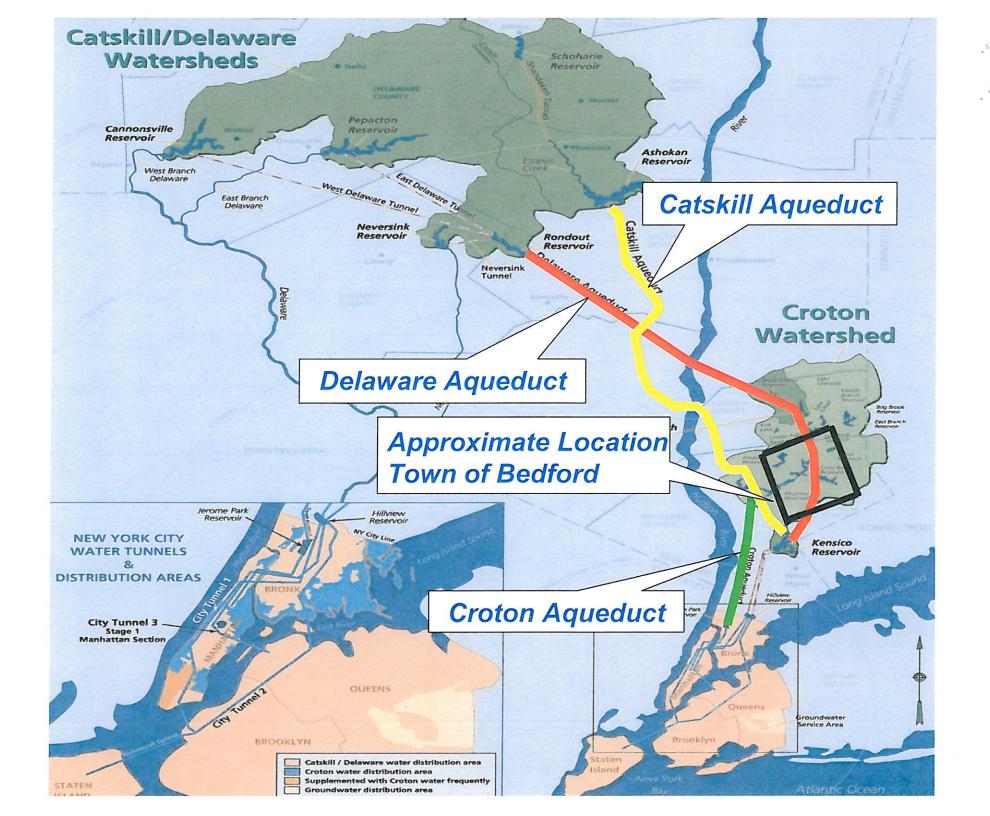


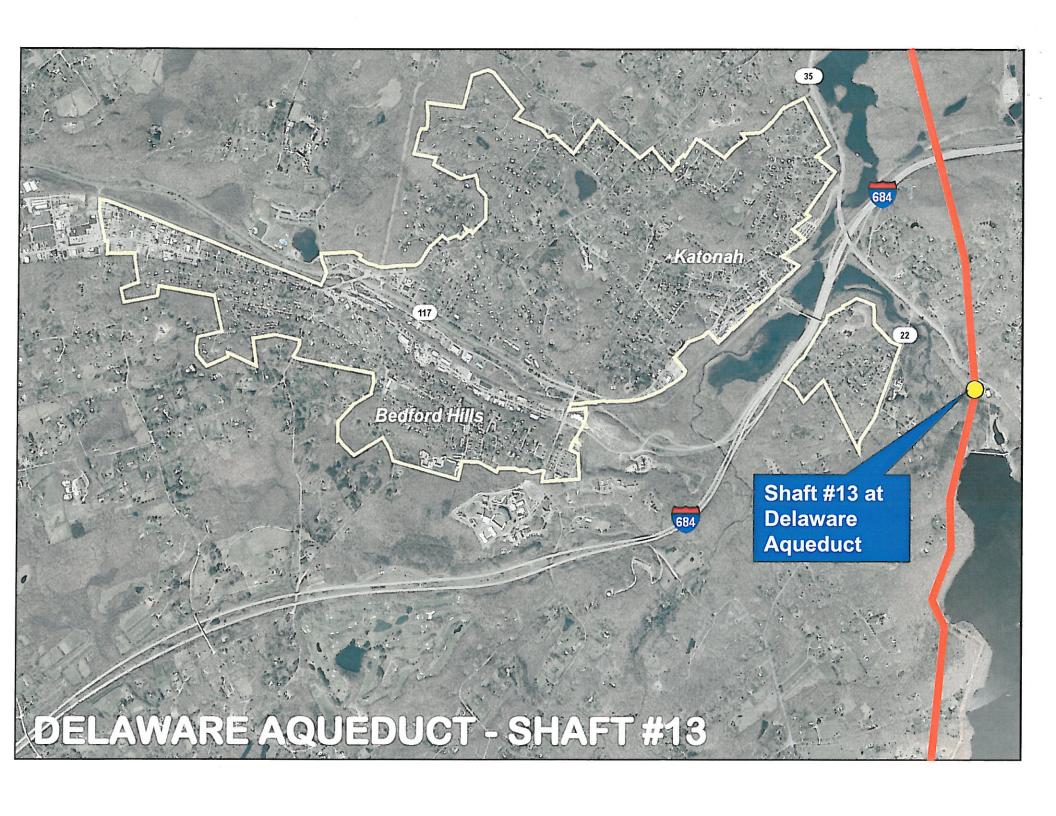
### Why is Treatment Required?

- Federal and State regulations
- Surface supplies must be treated
  - Surface Water Treatment Rule
  - Long-Term Stage 2 Enhanced Surface Water Treatment Rule
  - Stage 2 Disinfection By-product Rule
- Control of cryptosporidium, Giardia, viruses, turbidity, Total
  Organic Carbon (precursor for trihalomethanes and haloacetic acids)
- NYCDEP
  - Filtration Avoidance Determination for Catskill-Delaware applicable for only downstream of Kensico Reservoir
  - Need to treat Croton Supply
- Treatment Steps
  - Coagulation
  - Microfiltration (membranes)
  - Disinfection
  - Corrosion Control

# Additional NYCDEP Delaware Aqueduct Supply Benefits

- Substantially softer water supply
  - Elimination of the need for residential water softeners
  - Extended plumbing fixture life
- Reliable, high quality water supply will help maintain or increase property values





### Plant Flow Design Summation

Maximum measured daily flow 1,106,000 gpd

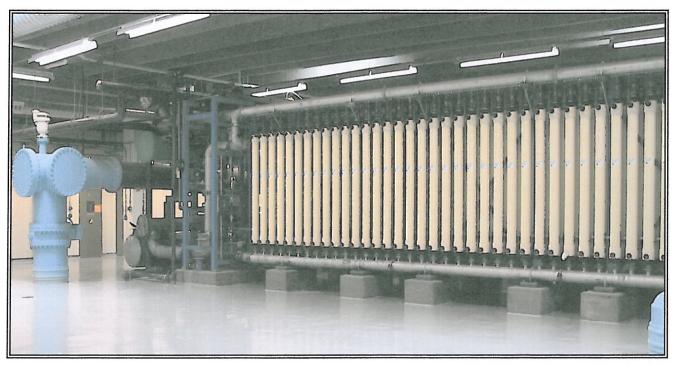
Department of Corrections 500,000 gpd

Allowance for Future Growth 300,000 gpd

Total flow 1,906,000 gpd

Design Plant Flow 2,000,000 gpd

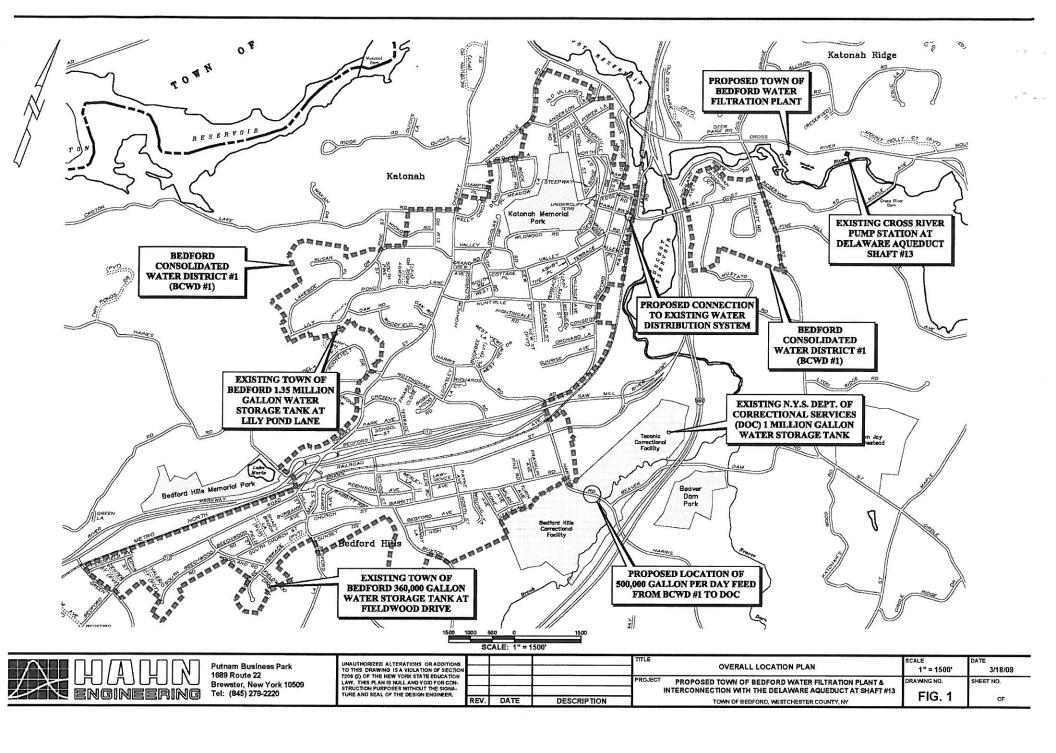
## Westminster, Colorado – 15 MGD

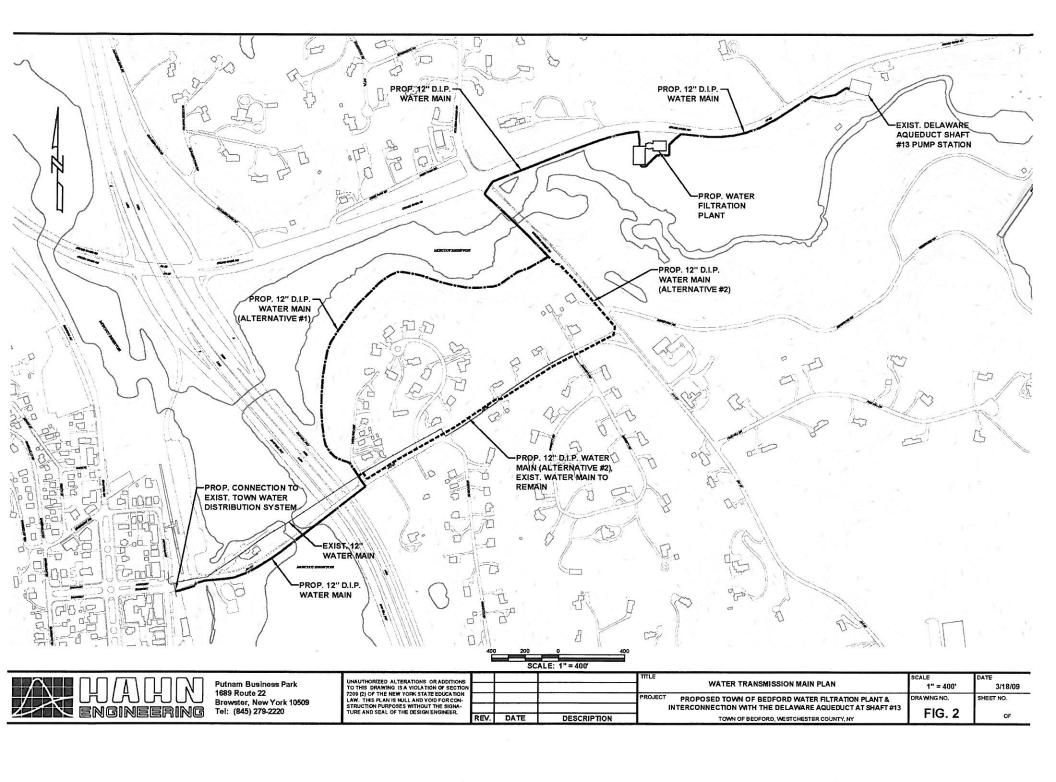


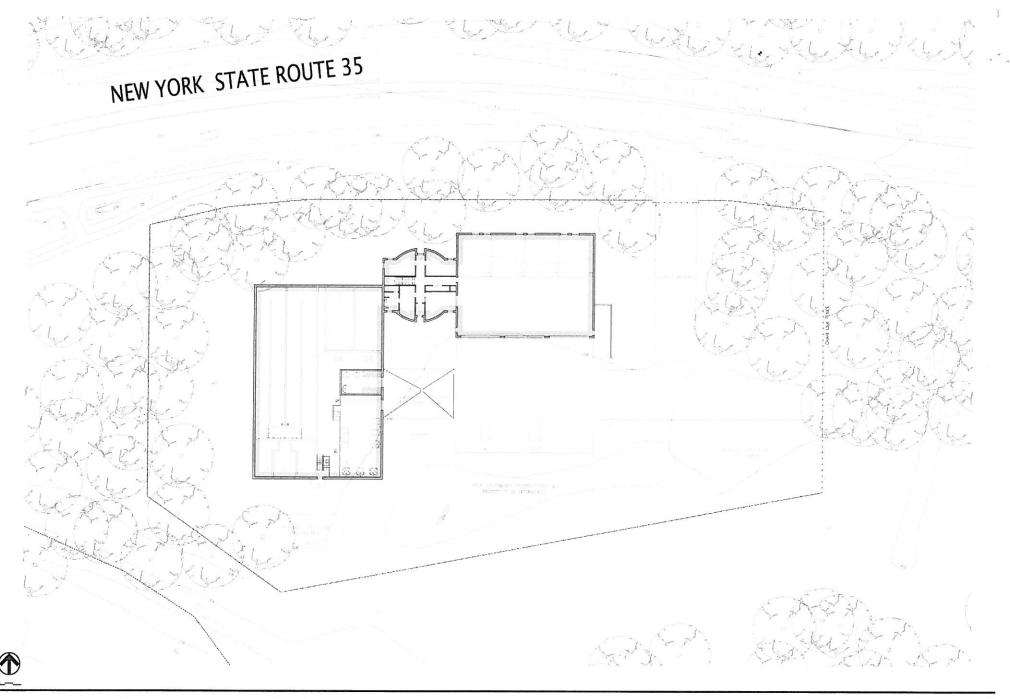






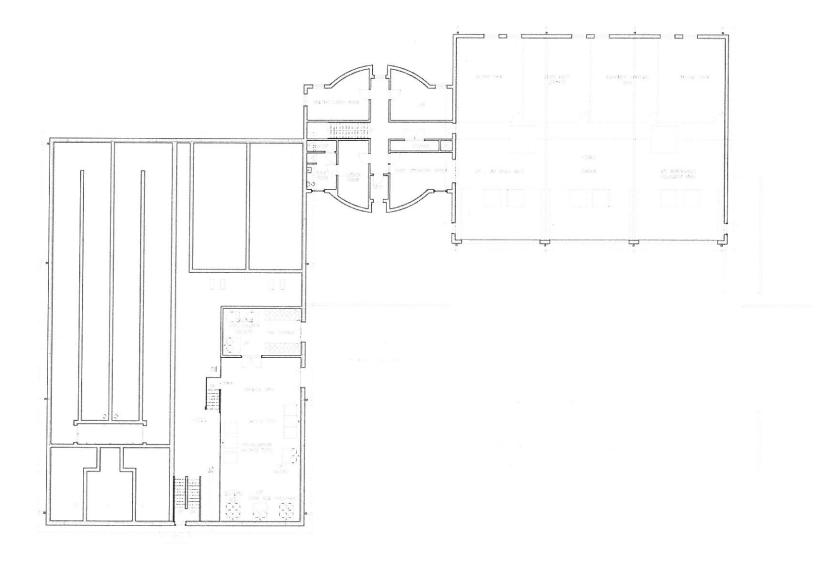




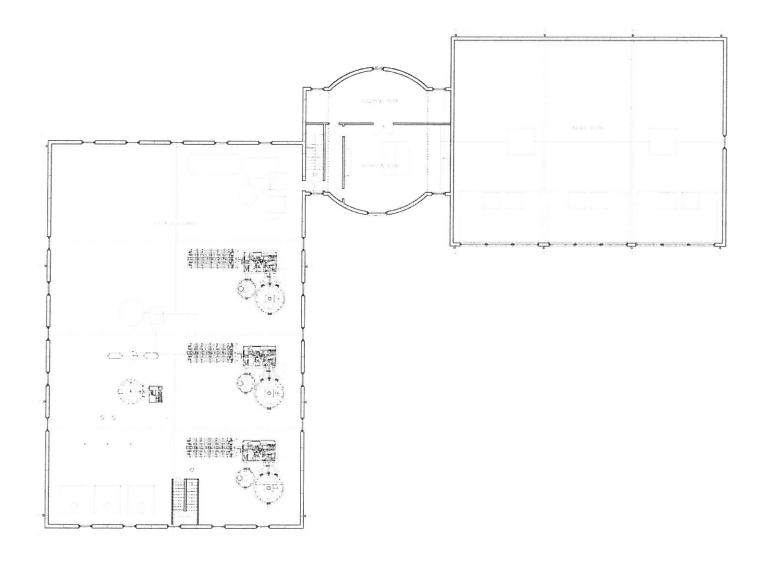


Town of Bedford Lothrop Associates LLP Bedford Water Treatment Plant April 9, 2009 Site Plan 1/16" = 1'-0"

Architectural Site Plan



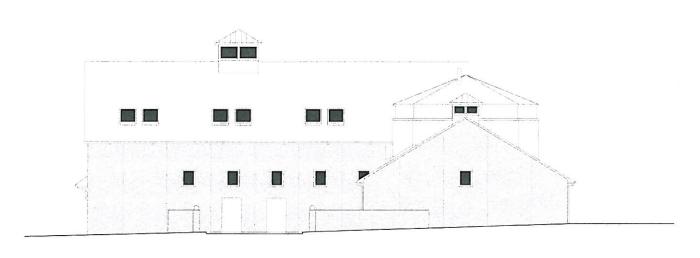








North Elevation



# New York State Department of Corrections

- Existing groundwater supply requires filtration
- Has entered into a conceptual agreement to become a Consolidated District water customer
- Will potentially pay 25% of debt service and a pro rata share of operating expenses, estimated at 30%

## Next steps

- Obtain Facility Plan Approvals from Department of Health and NYCDEP
- Conduct borings to establish rock quantities and Treatment Building foundation design
- Continue with the Design of Transmission Line and Filter Plant
- Optimize energy use and residuals management cost
- Obtain Approval from the NYC Design Commission
- Work with LEED consultant for a "Green Building" and site and in consideration of the Town's energy reduction initiative
- Obtain all Approvals from Applicable Agencies
- Construction Complete by Summer 2011

## Funding

- Possible Federal Stimulus Funds Grant 25% to 50% of Project Design and Construction Costs
- Town to Bond the Project
  - Potential for NYSEFC low interest loans or subsidized interest loans
- NYSDOC to pay for construction, operation, and maintenance related to their share of water needs

## **Cost Components**

Treatment Area

Admin, Mechanical, and Electrical Area

Garage and Workshop

**Transmission Lines** 

**Construction Allowances** 

Subtotal

**Design and Construction Inspection** 

**Total** 

\$11,636,000

\$2,903,000

\$1,880,000

\$4,044,000

\$701,000

\$21,164,000

\$2,540,000

\$23,704,000

### **Estimated Average Household Costs**

	Curr	ent	Inc	rease	То	tal
Annual Water Rates	\$	484	\$	344	\$	828
Annual Water Tax	\$	365	\$	420	\$	785
Potential Annual Water Tax with 25% Grant	\$	365	\$	315	\$	680
Potential Annual Water Tax with 50% Grant	\$	365	\$	210	\$	575

### Comparison to annual cost for other utilities

Cable and internet	\$600-\$1,800
Electric	\$840-\$1,200
Oil/Gas Heat	\$1,800-\$2,400

### **Existing and Proposed Total Annual Water Charges**

Existing Annual Total Water Cost	\$849
Proposed Range of Annual Water Costs	\$1,404-\$1,616

#### Note:

Increase in water rates due to purchased water, power, residuals management, and other operating expenses

It is clear that to guarantee an adequate quantity of high quality water supply for the future, the district will require significant investment. The key will be to continue moving forward deliberately and judiciously so that the Town secures the quantity and quality of water resources it will require for years to come.

